

Aviation News

MAGAZINE PUBLISHED BY THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS
EST. 1915



Shape of the Future: Model of a new swept-back airfoil design being tested by the National Advisory Committee for Aeronautics. The test section is slung below a Northrop P-61 and air passing over the section attains sonic speed when the P-61 dives at about 500 mph. Story on Page 12 (NACA photo)

Airlines, CAA, AAF Attacking Winter Flying Problem

United installing Sperry gyropilots as CAA pushes radar systems.....Page 7

Ercoupe Seen Leading Craft Among Private Owners

Production up to 3,400 with 10,500 backlog; engine shortage is problem.....Page 15

House Will Probe Surplus Sale of C-54s to Airlines

Dismissal of veterans' suit asked as WAA moves toward court decision.....Page 24

Shelve CAB Deicing Plan in Face of Industry Disfavor

Postponement of rulings permits more orderly development, say engineers.....Page 27



the future of AVIATION DEPENDS UPON AUTOMATIC CONTROLS

1938

Just as automatic controls have shared responsibility for the phenomenal progress of aviation thus far, so they are prepared to contribute to the new accomplishments of the future. To Minneapolis-Honeywell this fact is a vital challenge. That is because the business of Honeywell is automatic control. How successfully the challenge has been met is demonstrated by the Honeywell Electronic Anemometer and the Electronic Turbo-Supercharger, standard equipment with the A-1F, whose precision and reliability are demanded. These, together with the Honeywell Electronic Fuel Gauge and Cabin Temperature Control system have already won acceptance in the transport field. Today, the creative engineering ability that has been responsible for Honeywell's dominant position in the field of automatic control for more than 60 years, in developing many more control systems. And you can continue to expect further progress in automatic controls for aviation from Minneapolis-Honeywell leadership. Minneapolis-Honeywell Regulator Company, 2660 Fourth Ave. So., Minneapolis 8, Minn.

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MINNEAPOLIS
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AERONAUTICAL CONTROLS

THE AVIATION NEWS

Washington Observer



NON-SCHEDULED GROUP REMAINS—Reports that Administrator T. P. Wright will let his CAA Non-Scheduled Flying Advisory Committee die are without foundation, say CAA sources claim. The group has accomplished numerous reforms in government regulation of aircraft service operators, some of which the Administrator has approved. It was only recently that the non-scheduled committee members were given the right to receive government travel allowances for attending sessions.

PRICE ON AIRMEN'S GUIDE—As forecast on this page, Sept. 5, CAA will cease complimentary distribution of the Airmen's Guide to pilots, effective Oct. 15, and a yearly subscription rate of \$7.50 will be levied. Orders should be sent to the Superintendent of Documents, Government Printing Office, in Washington, Algonquin, CAA control tower and communication stations continue on free list, however.

DEPARTMENT OF TRANSPORTATION—Sen. Small (Illinois) Committee proposal for a Department of Transportation, headed by a cabinet member, is one of nine new measures of Congressional transportation experts who see such a plan as promoting policies. They argue that a Secretary of Transportation would be subject to the whims of annual administration. So far, two proposals have received support in Congress: (1) an independent aeronautics commission, proposed after the Interstate Commerce Commission, which would take over functions of CAA and CAB, and (2) a transportation commission, subsuming ICC and the aviation agencies. The first plan was backed by Chairman Charles McNair of the House Interstate & Foreign Commerce Committee; the second was urged by Mr. Truman during his Senate days. Recent questioning at the White House has received non-committal replies on the President's present attitude.

SURPASSING THE FORECASTERS—Less than 18 months ago Administrator T. P. Wright prophesied that by 1947 or 1948 the number of private aircraft would reach 75,000, where U. S. ownership probably would remain for a while, without requiring improvements in plane performance and lower costs. Like other aviation forecasts, however, this one proved too conservative. Today we have 35,000 private aircraft and, manufacturing pressure production runs and backlogs, there will be well over 100,000 before the end of 1947. It is only fair to say that there are some backlogs of depression in the industry, however,

who claim to see signs already of decreased demand for lightplanes.

SURPLUS PLANE QUIZ—The general investigation and disposal of surplus aircraft and equipment, recently scheduled by the House Surplus Property Investigating Committee, will not start for several weeks, until the committee have taken a glance at WAA's clearing of 38 C-54s to the airlines.

ECHOLS PROPOSAL DUMB—The non-sense proposal that some high Army "name" be put up for election to the presidency of Aeronautical Industries Association has cleared, and the subject is said to be shelved for at least several months. Gen. Officer Echols was discussed for the post as an honorary member committee member in New York recently. Meanwhile, John H. Hays, who is praised for an efficient administration as executive director, remains in active working chair of AIA.

AAF vs. WAR DEPARTMENT—Although Pentagon circles consider it highly secret information, Army Air Forces is warning staff resistance from budget of the War Department, who are holding out for cheap. AAF cuts in the government's fiscal year 1948, beginning July 1, 1947. AAF has just taken its budget proposals to War, for clearance and revisions, before the Budget Bureau opens hearings in early spring. AAF officers say the attitude of the general War Department in this instance is one more reason why they must have independence, if national security is to be preserved.

SUBMERSIBLE PLANES—Navy conservatives are questioning feasibility of a submersible plane also now being used as model vessel by Navy technicians. The project requires a plane built strongly enough to sit out in sea, submerge to escape pursuit or submerge surface craft, and then take off again to continue fight. The "underwater aircraft" would be powered with jet engines in the sea, and air vents would close automatically when the plane struck the water. An auxiliary power system would be used underwater.

PIAAO SHOWDOWN—Determination of whether American or British electronic air navigation devices will be used in international commercial aviation, is expected to be made at an Oct. 30 PIAAO conference in Montreal, following demonstrations of British and American equipment in London and at the CAA Indianapolis experimental station.



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Whether you're designing a two-place personal plane or an 80-passenger transport, the Goodyear Shock Brake offers major advantages unknown to any other brake. It has higher energy absorption, is fast-acting, doesn't wear out, is easy to install and weighs less. It's a real "break" in the way you think about brakes. It's a real "break" in the way you think about brakes. It's a real "break" in the way you think about brakes.

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More aircraft land on Goodyear tires
than on any other kind

Airlines, CAA, AAF Make Joint Attack on Winter Flying Problem

United installing Sperry electronic gyrocompasses using automatic landing device at CAA makes work on radar installations.

Announcement by United Air Lines that it plans to install an electronic gyrocompass on its planes a Sperry electronic gyrocompass incorporating automatic landing features focuses attention on a three-way attack by the airlines, CAA and AAF on one of air transport's major problems: bad weather landings.

In the face of widespread warnings that this winter will give air transport its severest test of regularity—because of more and larger planes and increased operating costs—CAA is making work on installation of its instrument landing system and the airlines are giving increasing study to landing devices. Last week representatives of CAA and the Air Transport Association met with AAF officers to arrange for a team of AAF Ground Control Approach units for CAA operations and use by airlines in the Washington, Newark and Chicago areas.

Outside of its experiments with GCA at Indianapolis during the past six months, this was CAA's first admission that GCA might have some applicability to the bad landing problem.

CAA Lags—In this respect, CAA had lagged behind at least one airline TWA, particularly all of whose pilots have checked out on GCA and line 4, has already put up a borrowed set of its Biscanville, Del., base for training its own pilots.

The Sperry device being installed by United and demonstrated at Washington Field, Long Island, is key to installation of the CAA system of fan markers, beamer beam and glide path. In manual operation, a pilot centers on the runway by means of the beamer, then rides down the glide path, with a cross-hair as the instrument panel gives him a check on whether he is lined up with the runway and making the proper descent.

By using the Sperry A-13 Gyrocompass, a plane can be landed on the CAA system with the pilot's hands off the controls. A somewhat similar device was perfected during the war by McDonnell-Hoodwell but is not yet produced commercially.

Misreading Misheard—Advocates of the automatic system in that it is neither stop nor start, assuming the possibility of a pilot's misreading instruments. This particular hazard was discussed last week by Rear Admiral Louis E. Flinn, assistant chief of Navy's research office "instrumentation has become so complex," he told a Pittsburgh meeting of the American Society of Mechanical Engineers, "that we have reached the limit of the man's average ability to utilize the information that is placed into the cockpit."

Advocates of GCA, which at the same time makes it most appropriate.

able to criticism, is that it takes responsibility from the cockpit, and turns it over to the controllers on the ground who, in radar scope, can see the panoramic picture much better than the pilot.

By keeping tabs on a plane on the radar scope, a GCA controller tells a plane what the runway. All the pilot is required to do is to maintain a heading and constant rate of descent. He needs no additional instruments in his plane and the usual radar receiver. The CAA system, in contrast, requires four or five radar receivers in the aircraft.

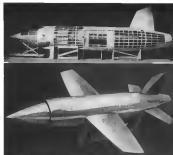
Explosive Objections—CAA, ATA and the Air Line Pilot Association maintain that pilots do not approve of GCA because they do not want to put their safety entirely in the hands of persons on the ground. The situation is at variance with the experience of TWA which is now shared with its GCA plane because most of its pilots endorse the radar system.

This objection is GCA—entirely psychological—will be given a thorough work-out when the GCA unit issued by the Army are in operation for some time when the first of January, 1947, however, CAA does not plan to make full



NEW DEFENSE FOR LONG RANGE BOMBERS

Designs artist's drawing of a proposed 12-engine AAF bomber defended by parasite fighters. Bomber would be powered with six prop jet engines and six pure jets and have a range of more than 10,000 miles. Each bomber would carry two parasite fighters as fire and aft bomb load with a large middle box for the bomb load. Parasite fighters would be launched from bomb bays for launch and be equipped with jet-assisted takeoff. (Dowd's Aeronautical Laboratory photo)



BRITISH SUPERSONIC PROJECT:

Abandoned eventually for "security reasons," Miles M 52 was to be a piloted craft designed to travel at 3,000 m.p.h. at 28,000 ft., which altitude was to be reached 1 1/2 min. after taking off. Though here are photos of milestones, M 52 was to be 33 ft. long with 27-in. wing span, and an engine developed by Power Jets was to be fitted, capable of 7,000 hp. In some respects aerobically-minded, M 52 resembled BoT's X-5. (Press Assn. photos)

and sole use of GCA's parallel routes. The screening screen, which covers a 36-mile radius, will be used for traffic control and will be reinforced by the CAA's landing system.

Full details on the arrangements under which CAA is acquiring these units and how it will use them are expected to be announced this week. AAF has a total of 35 GCA sets within the continental U. S., seven of which are the latest model, requiring only two, instead of the wartime six controllers. Presumably, the three sets to be turned over to CAA will be the improved models.

Disaster to Pilot—CAA's system, an outgrowth of developments in the early thirties, is installed at some fields, but used, and it is familiar to airline pilots. That is one reason why CAA, backed by the airlines has been reluctant to consider a complete switch to GCA. CAA, and some airlines, take the attitude that GCA is not proven and that the CAA system, with its faults, is at least a system in being.

The point is made that although

the system is nearly 35 years old, by 1942 there were only eight ILS installations. This was due in large measure to the airlines' all through the thirties for a better system, with engineers holding out the hope that in a few years more, such a system would be available. Today, much the same attitude is taken in some quarters regarding not just GCA, but all radio. Right now, "we will have a better radio system in two years," the argument runs, "we will have a better radar system in two years." It is not clear why we should have a better radar system in two years.

Hoping to avoid the error of the thirties, CAA is proceeding as fast as possible to install its ILS. Presumably in operation are ILS at 12 commercial fields, plus 13 installations at Army fields. The system is installed at 11 deactivated Army bases which CAA hopes to be able to use by next June 30. CAA plans that its system be in operation at 112 stations. On the premise that the CAA system will be standard for some time to come, David is going ahead with installation of the ILS. Presumably, the automatic landing procedure of which will be useless without CAA's instrument landing system.

Meanwhile, the airlines face a

winter which is being forecast as being the last weather over the horizon of air transport for commercial operations. Landing equipment to the extent of CAA, AFA and AAF last week was the thermostat which at Washington, N. Y., registered 36 degrees, at Spokane 43, at Albany 43.

Wright Employs Suit Asks \$1,500,000 Pay

The Federal court suit of some 2,000 present and past employees of Wright Aeronautical Corporation to resolve the problem of partial-to-partial pay in this plan is seen as a forerunner of what other aircraft companies and other industries may face in the future. Although these workers are not represented by a union, CIO President Philip Murray recently warned that CIO, which has a large representation in aircraft plants through the United Aircraft Workers, would seek pay for "working time" in manufacturing plants. Partial-to-partial pay in mining has been backed by the U. S. Supreme Court, and the United Mine Workers, United 18, AFL, has been pressing for it in manufacturing industries, where it also has members.

Inside union rivalry, restrictions on general wage increases and a recent Supreme Court decision in a case involving the Mt. Clemens Pottery Co. have given impetus to movement to extend the principle to manufacturing. The court held in the Mt. Clemens Pottery case that, under the Fair Labor Standards Act, time spent by employees in working to their place of work or from their place of work to their place of work was "working time" and subject to wage payments.

It contained the contention of the employees that preliminary activities such as putting on aprons and overalls, raising the dials, turning on switches for lights and machinery, opening windows and assembling and sharpening tools, constitute working time unless the time is negligible.

Wright employees, in the suit filed in Newark, ask for an estimated \$1,500,000 for time spent each day between Jan. 1, 1944, and Sept. 30, 1945, in working time. The plant goes in the clockroom changing clothes, walking to the timeclock, waiting to place of work, and preparing machines for operation, as well as for similar time spent of the end of the day.

Coordinated Transport Department Is Urged by Senate Committee

Small business group recommends cabinet status as urgent necessity to meet transportation requirements of public.

Basic legislation to promote coordination of the country's transportation systems—air, water, rail, motor—into a planned system serving the public interest in all sections of the country explicitly is declared "an urgent necessity" in a comprehensive legislative report on transportation issued by the Senate Small Business Committee.

"World War II postponed, but has also made more urgent, the necessity for further Congressional action to coordinate and strengthen our national transportation system," the report asserted. The "do-or-die" methods of transportation among carriers "about to return to more intensive forms than ever before," it was predicted, "will leave 'roadside inadequate' to meet the transportation requirements of the public or establish the virtual collapse of an economic basis."

Waters of Danger—In promoting increased coordination among the various modes of transportation, the Committee warned of the dangers inherent in "that did not appear" "interference" of over-seeing the proposal which has been aggressively pushed by the transportation industry.

Condemnation should be given to the establishment of a Department of Transportation, headed by a Cabinet-level Secretary, which would coordinate the activities of the Interstate Commerce Commission, Civil Aeronautics Authority, and all other transport functions now dispersed among various agencies.

Three special agencies however should be established immediately: (1) a three-member Federal Transportation Authority, to study transportation developments, coordinate and make recommendations furnishing a sound system in Congress, the CAB and the ICC; (2) a National Transportation Advisory Council, composed of Presidentially appointed individuals prominent in transport fields, to serve the Federal Transport Authority in an advisory capacity; and (3) an Office of Public Transportation Coordination, to be established in the Justice Department with the duty of representing, at the direction of the Federal Transportation Authority, the public interest in proceedings before the ICC and CAB.

Ask Joint Operations—In order to permit full coordination of services, the report urged that the

various shipping the choice of whatever modes and combinations of transportation agencies they may consider to be most economical, the ICC Act and the CAA Act should be amended so as to make it mandatory for airlines to join with other carriers in the maintenance of joint through routes and "to make no new routes or routes" "to be made in the public interest."

Procedural law makes it obligatory for common carriers to establish joint through routes at the following levels when deemed desirable in the public interest: all-rail, all-water, all-air, all-pipeline, rail-and-water and also rail-and-pipeline.

Major lines along with airlines are not now obliged to join—but should be with other types of carriers in establishing through "joint type" routes.

Federal and state tax authorities should work out a more efficient and equitable program of carrier taxation providing, among other things, for central assessment of carrier property—a move long advocated by the airline industry.

Provisions are carried should be reduced at federal capital stock taxes, declared value carrier profits, taxes on transportation of property, and taxes on advertising ad.

The National Refereed Board

AVIATION CALENDAR

- Sept. 22-23—Warner Acadia Conference, New York
- Sept. 24-25—National Aeronautics Association, New York
- Sept. 26-27—All-Georgia Air Festival, Atlanta
- Oct. 1-2—National Air Show, New York
- Oct. 3-4—National Air Show, New York
- Oct. 5-6—National Air Show, New York
- Oct. 7-8—National Air Show, New York
- Oct. 9-10—National Air Show, New York
- Oct. 11-12—National Air Show, New York
- Oct. 13-14—National Air Show, New York
- Oct. 15-16—National Air Show, New York
- Oct. 17-18—National Air Show, New York
- Oct. 19-20—National Air Show, New York
- Oct. 21-22—National Air Show, New York
- Oct. 23-24—National Air Show, New York
- Oct. 25-26—National Air Show, New York
- Oct. 27-28—National Air Show, New York
- Oct. 29-30—National Air Show, New York
- Oct. 31—National Air Show, New York
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- Dec. 29-30—National Air Show, New York
- Dec. 31—National Air Show, New York

and the Secret Service. Based should make a joint study of the feasibility of equipping reconnaissance planes with airlines and other carriers. This would point to the establishment for airlines employees the same "indefinite-the grave" social security system now in effect for railroad employees.

Purpose: Taxes—Their views on airlines for right-of-way through the airports would be improved until airlines have matured, once such taxation would be passed on to the public in higher transport cost and be self-defeating by discouraging the growth of air transportation.

The conference method of establishing rates and operating agreements, long a practice in the railroad field, was more lately professed in the air transport and water transport fields, the Committee concluded, "serves a useful public purpose" but warned that carrier group activities "are obviously a means of reinforcing competition between carriers—and infrequently used for reached agreements or bringing pressure preventing rate reductions or anticompetitive in service which individual carriers, left to themselves, would have established." In order to prevent undesirable welfare agreements among carriers, the Committee called for legislation clearly defining the extent to which carriers may lawfully confer and agree on rates and other matters, requiring that all carrier conferences be opened for intimacy by all interested

parties, and that records of the conference proceedings be open and available for public inspection.

To keep monopolistic conditions in the transport field at a minimum, small carriers of all types should be given "the greatest freedom from hampering restrictions consistent with the public welfare" and be protected from unfair competitive practices of "large carriers." The Committee proposed that operators of five small aircraft, or less, be freed completely from all requirements of certificates and permits.

United Aircraft Names Four New Controllers

Eric Martin new manager of Hamilton Standard Propellers Division according Sidney Swann.

Reorganization of the financial and accounting organization of United Aircraft Corp. included reorganization of the part of director controller in each of its four operating divisions. Promoted to the controller's posts are: Richard T. Borer, Pratt & Whitney; James H. Cooper, Hamilton Standard Propellers; James J. Gaffney, Chance Vought Aircraft; and Frederick O. Wetzel, Sikorsky Aircraft. All are veterans of United's accounting staff with a combined service record of more than 50 years.

Clifford K. Bart, formerly auditor of the Pratt & Whitney Aircraft Corp. of Hartford, has been named assistant to the controller at United.

Eric Martin has assumed the duties of acting manager of Hamilton Standard Propellers Division in addition to his position as engineering manager of the division. He succeeds Sidney Stewart, president and general manager who resigned to take an unannounced

cooperative position elsewhere. Martin has been with Hamilton for 18 years and had an active part in developing the centrififugal pitch propeller for which Hamilton was the Colson trophy in 1943.

Other changes at United Aircraft include: Keith-McCormick, George H. Smith, Jr., and John H. Smith, Jr., to the Hamilton Standard Propellers Division; and John H. Smith, Jr., to the Hamilton Standard Propellers Division; and John H. Smith, Jr., to the Hamilton Standard Propellers Division.

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Johns Hopkins Air School To Concentrate on Research

A department of aeronautics for graduate study and research, rather than the training of engineers,



including them to the industry using a power plant. The school will be a part of the Johns Hopkins University, and will be a part of the Johns Hopkins University, and will be a part of the Johns Hopkins University.

cooperative position elsewhere. Martin has been with Hamilton for 18 years and had an active part in developing the centrififugal pitch propeller for which Hamilton was the Colson trophy in 1943.

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WAA Sells 21,000 Scrap War Planes for \$6,582,156

Rate of 21,000 surplus combat type planes which cost \$3,304,304.50 was approved by War Assets Administration for \$6,582,156. The planes will be used only for scrap, salvage and other non-flight purposes. Approximately 200,000 pounds of aluminum alloy and other materials can be salvaged from the planes.

The unswathed ladders and the amount of their beds, together with the approximate number of planes purchased and their locations are as follows:

Martin Wunderlich, Jefferson City, Mo., \$1,779,000 for 3,500 planes at Keesler, Ark., Sherman Motor & Iron Works, Oklahoma City, Okla., \$1,181,000 for 2,500 planes at Clinton, Okla. Texas Railway Equipment Co., Houston, Tex., \$1,171,750 for 4,300 planes at Walnut Ridge, Ark., Composed

of the following:

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French Colmar Transport

Requet's 22 passenger Colmar transport is one of greatest models with which French are rebuilding their commercial air network. Powered by two Gnome-Rhone 1200-hp engines this plane has 12,000-hp engine, cruising speed of 250 mph at 9,000 ft. and gross weight at takeoff of 30,000 lb. It is manned by crew of four.

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the cheaper design, and FFA has added about 100 sq. ft. to the L-10. Only \$350K job, added a diesel and extra extensions to break the outside lines.

McDonnell has its own design, we do a couple of others, but most companies interested want ready plans, which must be approved by FFA. Adjustment of these designs to aircraft production lines is a crucial part of the delay. There has been some question of Lincoln patents.

One company almost sure to build homes told AVIATION NEWS it believes the price now of \$300 for a two-bedroom design and \$400 for four bedrooms will have to be raised by about \$200.

Construction industry, backing the government's prefabrication program, said it fears a permanent shift of home building to the manufacturing industries, may be supported by the building trades unions, dominated by AFL, which doesn't like the idea of losing jobs. One interested aircraft official said he feared AFSA unions would refuse to work on foundations and assembly of the homes. Scepticism for FFA, said they didn't believe AFSA would back the program because for the prefabrication houses. Furthermore, CIO dominates the aircraft industry, and will favor prefabrication manufacturing which some qualified observers believe, could grow into an enormous industry.

FFA, whose estimates perhaps don't seem too conservative, says that these aviation firms who go into housing will do so on a permanent basis, in the belief that public will accept prefabrication on a large scale, and that factory work will

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New Jet Record

The new American official speed record at 541 mph set last week by the Republic RF-1 Thunderbolt II, powered with a General Electric T-58 engine, was a record for a single-engine aircraft. The plane, which is expected to set last week's record, will be used to break the world speed record at 541 mph. The plane, which is expected to set last week's record, will be used to break the world speed record at 541 mph.

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maximum performance advantage over standard airframe operations.

Production of components for "stretch" profiles is attracting interest. One company is developing a low-cost automatic water heater, replacing a floor area only 15 by 15 in. Another is designing a light weight window for easy operation. A well-known glass company is working out exterior and interior color schemes to make a group of after hours look different. A sliding station equipment maker has shown PMA a bathroom that

of the wing. A model of the wing along under the fuselage of a Northrop P-61, is being given free air tests at NACA's Aircraft Engine Laboratory at Cleveland.

NACA is using P-61s in most of its flight testing because of the extreme strength combined with high speed of the aircraft. These characteristics play an important part in the testing of the sweptback wing section. When the P-61 attains a speed as great as 500 mph in a dive the airflow over the test section reaches sonic speed.

Flow Proper Shape—Purpose of the specially-designed airfoil is to attempt to determine the proper shape and angle of the leading edge air intake that produce best means of controlling the boundary layer of air closest to the skin of the airfoil. It is known that these slots produce an effect upon the flow of air over the wing. What is not known, and what NACA is working to find out, is what effect is produced by a slot at right angles to the leading edge, one parallel to the fuselage, a curved slot,

and various other arrangements. Tufts of yarn at the leading edge fastened to the wing surface give a visual indication of the effect of the air intake on the flow over the wing. Slots of various angles produce differing reactions on these tufts. NACA's aim is to develop the air intake which, while controlling the flow of boundary layer air, will produce the least effect on the most efficient flow over the wing.

Dual Purpose—This sweptback wing design with the air intakes is serving a dual purpose. If other use can be found for NACA's extensive investigation of new jet propulsion. Just as the Douglas Aircraft engineers are examining the possibilities of utilizing the air slots that furnish boundary layer control, to feed flow—making air to jet engines (Aviation News, Sept. 30), NACA hopes its novel approach as the wing's leading edge can serve the same ends.

West Coast Operators
West Coast aviation leaders, from fixed base operators to airline executives, gathered in Reno Nev. today for a close scrutiny of the state of their business after a full year of worldwide operations. It is the third annual Western Aviation Conference, and the meeting agenda spreads over two days of panel discussions and addresses by aviation specialists.

The current conference will present for the first time a section on "Aviation Education," with aviation colleges, universities and commercial air school operators joining in a discussion of methods of raising instruction in aviation professions.

Civilian Cut

Full effect on technicians at Wright Field of the cut in AAF personnel ordered to be made by Dec. 1 has not been determined, AAF stated last week, with a study on personnel at Wright still in progress. Meanwhile, held out in Air Materiel Command employment, of which Wright Field is a part, has now been set at 13,360.

This is approximately one-half of the total AAF cut, and is the greatest single cut in any AAF command or AMC, with 13,370 civilians, is the largest command. In terms of percentages, however, the AMC reduction, 77.5 percent, is under the blanket 20 percent originally scheduled.

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Turbine Blade Design Blocks Jet Progress

NACA continues at Cleveland studies methods of improved impeller blades for axial flow gas. Whittle urges other methods.

Hope of reducing fuel consumption of jet engines and thereby attaining greater operating economy is seen in experiments being conducted by the National Advisory Committee for Aeronautics on the design of the impeller blades on the turbines in jet engines.

To report on its study of impeller efficiency, NACA has held a conference at Cleveland where the nub of the question was stated by W. K. Raiter. Stated simply, it is the improvements in impeller design are difficult to secure because, despite the tremendous effort now being exerted on jet engine development, there is a lack of adequate experience on "unfettered flow theory."

Counter to Problem—At the bottom of the problem is the curvature or camber of impeller blades. NACA is testing these designs, with parabolic, elliptical and circular blade curvatures. The parabolic blade currently is showing greater efficiency and showing the widest capacity range of the three.

The range of impeller blades—the rate at which air is heated into the compression chamber—is a key point in the design problem. In planes with compressing engines, variable pitch propellers make possible constant performance of the aircraft with a variation in engine output.

Glider Sale

Boeing C-44 cargo gliders are being put on sale by the War Assets Administration this week at four locations. Estimated 30, the gliders are at Kelly Field, San Antonio, Tex.; Civil Air Squadron Depot, Shelby, Ohio (11); Army Air Specialized Depot, Panama, Canal Zone; and Hill Field, Oxnard, Calif. (18).

From Sept. 25 through Oct. 12, sales will be made only to private holders. In a previous sale of the type gliders at Taylorville, Pa., veterans had bought at 1/10 offered.

Designed by Boeing, the C-44 is a 15-passenger, high-wing monoplane, previously not eligible for CAA certification.



AAF's NEW EJECTION SEAT IN ACTION:

First action shot of the AAF's new ejection seat and automatic chair release designed for use in banking out at high speeds. Capt. Harry Bruckheimer, paratrooper veteran of 33 jumps, is seen in the upper right after being shot clear of the P-61V and before his automatic chair springs driver functioned. (AAF photo)

In designing jet engines, impeller thrust is calculated on the basis of a given set of conditions for compression chamber, nozzle, etc. The engine therefore operates at full thrust on takeoff, but, during climb and landing, when the prescribed conditions do not apply—as they may not at certain altitudes—fuel consumption and general efficiency become uneconomical.

Two Views—The current example cited by engineers is the original 1-40 jet engine. Total thrust developed inside this engine is about 16,000 lb. However, 12,000 lb. of this thrust into the compression chamber, and only 4,000 lb. is applied. Even a ten percent gain in impeller blade efficiency would add 1,400 lb. thrust thrust.

While NACA is tackling the problem of better jet engine efficiency and performance from the standpoint of the impeller blades, Boeing presently is approaching the same objective by concentrating on the many compression chambers of the centrifugal type engine, as opposed to NACA's belief that the axial-flow design is superior. This change in viewpoint recently became apparent when Britain's Trade Writtle, inventor of the jet engine, visited NACA's Cleveland laboratory and advised against the impeller research in favor of studying the centrifugal design.

On the basis of its belief in the superiority of the axial-flow engine, NACA is going ahead with its impeller study. Attainment of a wide capacity of impeller blades might make it possible to reduce jet engine output at altitudes while keeping high performance—with a consequent reduction in operating costs.

Canadian Surplus

Canada's War Assets Corporation has a large number of Cessna 190A amphibians, Avions V. Cessna Cessna, Newark II and Fairchild PT-22A aircraft for sale, with Department of Transport approving certificates of airworthiness for these aircraft.

The PT-22A will sell for about \$2,000. The Avions V, four engine, 17.5 ft. P.T. II, is priced by WAC at \$2,000, the Cessna Cessna is \$1,000, the Newark II at \$1,000 and the Fairchild PT-22A at \$1,000. The War Assets also possesses three types of Link trainers for sale, ranging in price from \$50 to \$400. The government surplus plans to strip several hundred obsolete military aircraft from surplus which it has had on sale with few buyers at from \$10 to \$12 each, including British made Cessna, Mustang, P-51 and Mustang variants.



Abene Airfoil: Two views of the swept-back airfoil NACA is testing as part of its investigation of boundary layer control and new jet propulsion at the Aircraft Engine Research Laboratory, Cleveland. The mechanics is attaching tufts which give a visual indication of the character of the airflow over the wing. Tests include curved angles of the ribs in the leading edge of the wing. (NACA photo)



A drawing room at the Riverside Engineering & Research Corp. plant.

Salon above the clouds

Don't go travel with all the comforts of a fine hotel. Aboard the sleek Boeing Strato-cruiser, luxury is built right into the design—then spiced with cabin to superbly appointed lounge on the wing's lower deck.

Passenger are lifted smoothly by the same mighty wing that bore the incomparable Boeing B-29's on their missions so victory. Great structural strength, and advanced aerodynamic design—fruits of Boeing's unparalleled experience in building 4-engine air craft—carry the first true supertrans-

port on safe, sure flight high above weather. Climbing or descending, no jostle or air turbulence confounding comforters throughout its level.

The Strato-cruiser's tremendous payload capacity means money comfort and cruising speed of 300 to 350 miles per hour represent a combination approached by no other airplane. Its seemingly low operating cost contributes to the lower fares placing air travel within reach of everyone. Boeing Airplane Company, Seattle, Washington Wichita, Kansas.



The model brand—high speed Strato-cruiser—Boeing's latest design.

BOEING
STRAТОCRUISER

Boeing is building fleets of Strato-cruisers for these transcontinental airlines:

PAN AMERICAN WORLD AIRWAYS • SOUTHERN INTERNATIONAL AIRWAYS

NORTHWEST AIRLINES • AMERICAN OVERSEAS AIRLINES • JETWAY AIR LINES

PRIVATE FLYING

Ercoupe Seen Leading Lightplane Among Private Pilot Owners

Production at Riverside, Md., reaches 3400 since Jan. 1, with backlog of 10,500 unfilled orders; engine shortage biggest problem.

By ALEXANDER M. SURELY

The two-control, spin-proof, two-place motor Ercoupe 415C, in the opinion of its manufacturer, has a more widespread popularity among the constant class of private owners than any other light-plane in the market.

At the Engineering & Research Corp. plant at Riverside, Md., where 3400 of the trim little tri-cycle-gear, two-seated airplanes have been built since last Jan. 1, at \$7,600 apiece, it is manufacturing more the sales department is tabulating an oversupply survey. Figures, still incomplete, indicate that the ownership of the plane is widely scattered among professional and commercial firms and farmers, with only a negligible number in the hands of aircraft service operators.

On the other hand, the bulk of production of many of the other lightplanes now in quantity production, have gone to the aircraft service operators for Cessna flight training schools. Ercoupe's popularity shows farmers and physicians lead in ownership, and that a large percentage of owners are men and women in the 25 to 60 age bracket.

Many Service Field—There have been more stories about helicopter experiments with the one-of-a-kind Ercoupe than any other plane we know. Now George Ryan, director of sales, has a new one to add to the growing legend, and vouches its authenticity.

A middle-aged man came to take delivery of his new Ercoupe and to fly it home, a cross country flight of several hundred miles. He casually remarked he had missed the week before. He was finally persuaded to take two days of additional intensive flight training by company pilots, but then he refused and descended safely to his plane for the flight. He took off from Riverside, proceeded to wire back news of his safe arrival, the

didn't crack up or have a forced landing. The man was so excited that he had arrived on schedule.

At the current production rate of 30 a day, ERSCO has no reservation of filling its 10,500 unfilled orders still on the books, in the current year. The number of orders has been from 2000 last January, when the company had a total of 12,872 orders and shipped taking more ERSCO expects to receive its orders about the first of the year. Indeed, that some owners may have purchased other planes or have changed their minds by the time and will start the year with new contracts.

Price \$7,600—Price of the 415-C two-place Ercoupe, the only model

currently in production, is new \$7,600. It was first priced at \$2,000 but the price was raised about July 1, like those of many other light planes on account of increased labor and material costs.

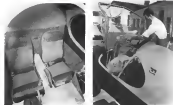
An experimental two-engine Ercoupe for four or five persons has been under development at the Riverside plant for a couple of years, but it will far from production. The prototype plane has yet to fly, and may accomplish its maiden flight sometime around the first of the year. Little is known about the plane beyond the fact that it is powered with two 125 hp Continental engines, an pusher installation, and that it is designed to be two-control and spin-proof like the current model.

The two-engine plane, with good luck, might be in production by the end of 1947 or the beginning of 1948. Its price is likely to be somewhere between \$7,500 and \$10,000.

Price \$4 a Day—ERSCO's president Les Wells, and Henry Bremer, chairman of the board, had hoped the company would be re-elected and the all-retail concept would cover two-place planes at the rate of \$4 a day, by this time, and might have come close to the goal had it not been for the major loss of the lightplane manufacturer, lack of engine. The company shut



3400 Ercoupe—Engineering & Research Corp., at Riverside, Md., last week had produced approximately 3400 of its 415-C two-control Ercoupe since the beginning of 1945. Officials believe that all three planes are in the hands of actual private pilots other than those of any other manufacturer.



CULLVER ACCOMMODATIONS:

Features of the new Cullver Model V side-by-side two-place 85 hp plywood construction plane, which have been designed for passenger and pilot convenience, are shown. Interior view shows layout, seating arrangement and dual seats, with wheel in center, Cullver's (top) control, as pointed between seats. Exterior view shows baggage compartment, and method of opening windshield door forward.

down production completely for a week, earlier in September because of engine shortages. As a result of the shutdown the company only expects to make 500 planes in August, or against 650 in August.

The Ecouage is one of the few lightplanes to use a 75 hp engine, although basically the Continental C-75 four-cylinder engine used, is of the same design and structure, except for carburetor jet size, as the C-65 Continental used on several other light planes, including the Cullver Model V and one of the Globe Swifts. Ecouage's constant up advised its distributors and dealers that it was possible to reach the engine with single cylinder up to 2275 rpm, since the C-75 had a 2000 rpm, recommended rate of cruise, and since Continental engineers offered no objection to the higher revving rpm.

Despite the trend toward metal wing coverings, it is likely that Ecouage will continue with its present wing for some time to come. The fabric supply situation isn't as bad as it was, and the changes involved in switching to the all-metal wing, would slow down production considerably. However the company has been experimenting with all-metal wings, and has test-flown at least one wing design, so that it is hoped to announce that the all-metal wing Ecouage may be forthcoming, perhaps in a year or more. Still another future variation on the present model be-

ing contemplated is a retractable landing gear version of the two-place plane.

Ecouage Delivers — Fred E. Wenz, designer of the Ecouage, and vice-president in charge of engineering, sees advantages and disadvantages to retracting the gear. The type of fuel tank seems to be having the Ecouage might be unnecessarily confused by the added complexity of retractable landing gear, although it would add considerably to the cruising speed of the plane, in both the climb, and eliminate drag. particularly the drag of the nose-wheel. Ecouage is the company may bring out a retractable gear version as a de luxe higher cost model, if the customer demand warrants it.

The company last week delivered its first two export planes, to Windsor Aircraft Ltd., Ontario, and is sending two Ecouages and a company representative to Buenos Aires, Argentina, for showing in an aircraft show there. Ryan sees Canada and South America as the company's first export markets, and hopes to develop sales in this hemisphere before going further afield although he has had 400 applications from would-be dealers and distributors in 32 countries all over the world.

Named to handle Ecouage's export program is Col. Richard Bernick, veteran of both World Wars, close friend of Bertha, and for many years in the government.

engine service. Plans call for offering a definite quota for foreign sales in 1967, while continuing export merchandising in the remainder of 1966 to build out a few distributor planes to foreign distributors.

Approximately 60 percent of the company's planes are now being shipped by sea and the land-based platform at the company plant is being expanded to permit loading of 5 line vans at a time. The other deliveries are by way, either by private companies, or by other representatives and customers.

CAA-Industry Agree On Recording System

CAA officials and industry representatives have virtually agreed on the form of a new aircraft registration system which will eliminate the duplicate recording fees on new aircraft sold in some states by manufacturers, distributors, dealer and customer in the same plane. (Aviation News, July 25.)

The new plan will provide for a dealer's registration and records which will be kept by CAA at a fee not yet determined, and which will be transferable as sole dealer license tags are transferable, from one new plane to another.

WFA believes the plan is to the customer, a twofold plan is filled out with the bill of sale. The customer keeps one part showing he has applied for CAA registration and made the other two parts of the form in CAA holds one part for its files and returns the other, attaching the plane's registration, in the owner, to replace his temporary evidence of registration. Not much of the new system is expected to be a considerable savings to personal plane dealers, distributors and manufacturers, as well as a quicker and more efficient means of private plane registration, and a happier customer.

New Low-Wing Pusher Developed by W.R. DuRand

An all-metal, low-wing pusher two-three place personal plane, the DuRand 35, is being developed at Orono, Maine by W.R. DuRand, former head of the aviation department at the University of Orono. He has organized DuRand Aircraft, Inc., and has set up a small shop in a three-acre field west of Orono. DuRand said

the plane was designed for mass production, and after the prototype is proved in structure tests and flight, he expects to seek banking to make it as quickly as any and the design is some other country to manufacture. DuRand previously in 1953, had built and successfully flown his first airplane, the DuRand 40, which was never manufactured in quantity.

State Officials Group To Discuss Air Rules

State and federal legislation of aviation both from economic and safety standpoints, was scheduled for discussion at a two-day session of the National Association of State Aviation Officials, with William L. Anderson, Pennsylvania secretary of state, president, according to Bette, Mont. last week.

Other subjects on the agenda included: Special Problems of State Aviation Officials; Airports and Single-Engine Aircraft; Air Traffic Control; Extension Under G.I. Bill of Rights; Personal Aircraft Navigation Aids; Application of Federal Airport Act; Airport Design and Construction; Airport Management; Public Relations for State Aviation Commissions; State Police in Aviation.

Speakers scheduled from outside the organization included: Milton W. Arnold, vice-president of Air

Transport Association; Harry McCall, executive director of National Aviation Trades Association; Dr. N. L. Klingenstein, Air Age Editorial Director; Thomas Reed, General Counsel, Airport, United States District Court; Veterans Administration, C. F. Byers and E. L. White (Federal Communications Commission); Gordon Matthews, Director Radio Division; Nils Jackson, Weather Bureau; John Hays, George Benson, E. W. F. Schmidt, Edward Cole, and James V. Bernado, all of CAA; Forrest Watson, president, National Private Flyers Association; Jacqueline Cochran, former national director of WASP; Gordon Sloper, Executive Aviation Corp., and W. W. Giff, Billings Mont., chamber of commerce.

Rhode Island Airport Trains 300 Veterans

Rhode Island State Airport, Hingham, R. I., has announced itself as one of the busiest airports in New England, on the basis of landings and takeoffs by the group of more than 300 veterans who are taking flight instructions in six weeks there, in addition to routine flying.

The field control tower reports that there have been more than 16,000 landings and takeoffs by student flyers in each of the summer months. Some of the smaller operations are completing that the

G.I. flying is returning other flight training, by week-to-day firms who are detaching their training out of the veteran program "downs down."

The boom in student flying, plus a recent CAA certification of three additional facilities to serve Rhode Island, is starting state proceedings to open another airport, in the northern part of the state (Rhode Island state law provides for state control of public airports, rather than control by city or county).

Haggen's flying school at Hilsgrange is operated by Bart Goss Aviation Corp., which has more than 180 students. This firm offers complete training and a few of its graduates, already, have airline jobs. Equipment consists of about 10 Aerucra trainers, a couple of retirement trainers, and several other planes. There are classroom facilities, and a Link trainer.

The number two outfit is Wagner Airways, which claims a present enrollment of 25 active students. Wagner is a big New England operation with other bases at Norwood, Wrentham and Boston, Mass. This company has been criticized to operate a feeder airline in the northeast area.

Other companies spending 60 schools at Hilsgrange are Niles Aviation Service, with about 80 students, Centennial Aviation, about 12 Allen School of Aeronautics, 84 and Lippert Aviation Corp. of Allen also runs a course to train A & R mechanics with an



ROOMY WHEELAIR INTERIOR

Sketches of the interior of the all-metal two-seater, four-cylinder Whirlair Model 111A, show its roomy accommodations in the 30-inch wide cabin. The prototype of the pusher twin-engine cabin 111A is due to be shown soon by its maker, Pagni Plastic Plastics, Inc., Tarrytown, Wash. The plane has

side bicycle gear, and is certified with 125 mph cruising speed and 81 mph landing speed. It is powered with a 160 hp Lycoming engine. The plane is expected to carry useful load of 1150 lbs. including four persons and 160 lbs. of baggage plus fuel and oil.

FIRST EXPORT SEABEE:

All of these concerns report some falling off of GE registrations during the past six weeks. Nevertheless, the control tower for the field says more than 20,000 take-offs and landings are recorded by student fleets for each of the countries it monitors.

An effort also is underway to have all student travelers equipped with radio receivers to facilitate the tower's control of traffic. A project, the pattern is cleaned, to make landings and takeoffs by turning on the revolving beacon a signal for student firms to be suspended activity until the commercial traffic is out of the lanes. When the light goes on as students leave the field, those in the air stay in the pattern and are forbidden to land. Despite all the activity, which has been going on since early spring, there have been no serious accidents on the Rhode Island field. One major problem is the speed of cars and planes, but the FAA promises no crash equipment for the field and a newspaper campaign is under way to spur action on this safety measure.

Photo at the top) opened engines here at Kent Quong, L. I., shown in the first two-panel Cinema 160 on flight, the plane being the new Air Model 105 of greatly advanced design. The plane is operated by Art Weis, Altdorf's chief test pilot, who is, incidentally, beginning of a tour of duty as chief test pilot of the Navy's new fighter, the F-4 Phantom II. In his last service assignment he was assigned to the Navy's new fighter, the F-4 Phantom II. Altdorf plans to build a new flying school and to begin preparation for opening passenger and flight instruction programs in cooperation with the Navy. The Centre is being flown by George Post, Edw. A. Smith, Chief Executive Officer, and chief test pilot, is presently in the leading in CAA approval of flight and instruction.

Addition of 125 acres to the Hooper-Parks Airport at Indianapolis, will provide space for 126 individual T-type storage hangars to be erected as part of a \$271,000 development and land-

—Alexander McHale

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PRODUCTION

Aircraft Companies Turn Talents To Non-Aviation Manufacturing

Diversification growing as industry seeks extra-curricular business; buses, trolley boats, cameras, and toys among side products; new companies still in aircraft production exclusively.

By BLAINE STUBBLEFIELD

The aircraft industry, having declined from wartime first place in the country at \$16.5 billion annual output with 3,325,690 workers, to 10th position at \$1 billion with 230,000 employees, is seeking new-or-business to utilize surplus capital, secure expanded plants and hold its personnel.

Two dozen aircraft companies use manufacturing, developing, or trying in with non-aviation products. Three of their companies will build light-aerial prefabricated dwelling houses under sponsorship of Federal Housing Authority. Apparently leading the diversification parade is Consolidated Vultee, which has acquired control of ACF-Bell Motors and its wholly-owned subsidiary Bell-Bell Motor Car Co., maker of motor buses, trolley coaches, marine and industrial engines— from American Car and Foundry.

► **Brecking** estimates Bell has backlog orders of \$25,000,000. Consolidated is controlled by Avco Corporation, which has also acquired control of Chrysler Corp., maker of household appliances and radios. Avco has control also of New Idea, Inc., manufacturer of farm equipment. The Consolidated-owned plant at Nashville is producing gas and electric kitchen ranges, and will produce New Idea appliances, both to be marketed by Avco. Consolidated has been interested in designing and building lightweight buses for several years, and presumably will emphasize that phase of Bell-Bell.

Ryan Aeronautical is producing metal alloy socket nails, 1920 pattern, for a mail-West distributor. Company's Metal Products Division is building test quantities of equipment for oil refineries, food industry, wineries, and other items "which naturally fit our facilities and offer low-cost production." Ryan's contract with Navy

for development of high test-resistant alloys for jet exhaust systems undoubtedly will yield something in the non-air line.

► **Martin** Products—Glenn Martin early in war launched beyond aircraft with Martinol record, to be produced as a \$100,000-a-plane at Pascagoula, G., which will have an initial capacity of 11,000,000 per year.

► **Martin Products**—Glenn Martin early in war launched beyond aircraft with Martinol record, to be produced as a \$100,000-a-plane at Pascagoula, G., which will have an initial capacity of 11,000,000 per year. Martin produces Multi-Mark, a plastic material for airplane rivets, an aircraft engine material, also Honeycomb, light panel structural material for many purposes. Company is associated with Whiting-Hawley in development of aircraft as booster device for relay of frequency modulation and television. Total patents in Company control now 136.

Three aircraft companies are making small boats. Grumman started turning out aluminum canoes soon after V-J Day, distributed in nearly every state "alongside with luggage and coffee."

Douglas Aircraft is building an all-purpose 70-pound sport boat of 940 aluminum alloy, aircraft production methods, with non-derivable flotation tanks, to sell for about \$100.



Grumman Canoe. Great strength of the aluminum canoe being manufactured by Grumman Aircraft Engineering Corp. is demonstrated in this photo of ten men standing in the boat. Length of the canoe is 25 ft., and its weight of 75 lb. supports a weight of 1,000 lb.

► **Churchill's** Diamond-Diesels Division, Jamaica, N. Y., is producing a light outboard boat of bonded plywood under contract with a distributor; also small and large rubber canoes for Emerson, Radco and Maytag. Radco, Diamond also engineering contract for light commercial transport trailer bodies.

► **Northrop** Makes Scooter—Northrop is exploiting light metal and aircraft techniques outside the industry. "New" product is the "Solitary" "33" two-wheel motor vehicle, for commercial and personal use. Northrop Aircraft, Inc., is putting out a new type scooter based on old scooter. Northrop Scooter, partly owned by Northrop and Joshua Henry from Waukegan, Ill., is "making substantial strides" in development of a "Toboggan" gas turbine.

► **Chance** Vought's new Metalite structural material has characteristics making it suitable for use in many non-aircraft products, will also release it for some time yet, as entire output goes into Navy planes.

► **Curtiss-Wright** has purchased Victor Aircrafts Corp., of Danvers, N. J., largest manufacturer; devoted exclusively in making 16 mm motion picture projectors, cameras, and silent equipment. Company says it will not change location or personnel.

► **Bell** Makes Canoe—Bell Aircraft's Burlington, Vt., division is making heater cases for a radiator company, glass cockpit parts for another firm, parts for aircraft instruments for a third, building 5 hp. gasoline engines and transmissions, dry-discharge apparatus, aluminum air-cooled engines, bottle holders, new changing devices.

Rate of growth is to accept virtually any type production for which we have available equipment and manpower.

► **Northrop Aircraft's** system is "We build 'em—you sell 'em." Has



BRITISH TRAINER

First flying pattern of the Royal Navy's new Puma Firefly Trainer, modeled after the Firefly fighter. The instructor sits in the rear cockpit, raised to remain in field of vision. Powered by a Rolls-Royce Griffon engine, the trainer has a top speed of more than 400 mph.

contracts for deep freeze and quick freeze units including several million dollars, building metal storage tanks, from equipment parts and waste tanks for oil and striking with aircraft technology.

Lester-Kearfson has an "Adora Racer" all-metal automobile for kids, with "eye appeal and utility," aircraft construction, for 1947 market. In wood shop, company is building display shelves and other merchandising set-ups.

Gibson to Cassinelli-G & A Aircraft built C-47-A gliders for Army, and one later in small and coastal radio contractors but "hope employees will gradually be absorbed into aircraft accessories production."

Spartan building luxury sports Masses Tealithrough, exclusively distributed by Frank D. Barton Company, which has delivered 1300, demand increased due to housing shortage, many inquiries from abroad.

Texas Aircraft Corp subsidiary Texas Industries, Van Nuys, Calif., is delivering Coca-Cola cold-change vending machines to Mills Industries, Inc., Chicago, also ready with a "mild-cleaning" vacuum cleaner of its own design this fall.

Following companies held Aviation News they were in aircraft production exclusively. Boeing, worked on new-entrance ideas but dropped them; Lockheed, in plans at present; North American, one hundred percent in aircraft. De-

who has been representative of U. S. firms in Caracas for many years.

Republic Backlog Jumps \$35,000,000 in Six Months

Beckley of Republic Aviation Corp., Farmingdale, N. Y., jumped some \$15,000,000 in the first six months of this year, the company's semi-annual statement disclosed.

On June 30, total backlog listed was \$61,631,000, made up of \$31,740,000 worth of orders for Republic trainers and Beech personal planes and AAF orders of \$49,000,000 for P-40s and XP-12 plane reconnaissance planes. Actual backlog is higher as the total does not include spare parts for Republic and Beech.

The orders include 28 Republics for American Airlines, and ten for Pan American Airways, but exclude Pan Am's option for an additional dozen Republics. The Beech orders ordered in the backlog are only those on which cash deposits have been received by June 30.

Republic's wholly-owned subsidiary, Aluminized Metals had a June 30 backlog of \$5,395,000, of which \$4,000,000 worth of orders was from firms other than Republic. During the first half of the year, the metal company operated at a loss of \$450,160 on sales of \$128,163. This loss reflects mainly reconstruction expense and development costs which are being charged off against current income.

Office of Technical Services Has Five Operating Groups

Organizational structure of the recently-formed Office of Technical Services of the Department of Commerce has been completed with the office comprising five operating divisions which perform functions previously carried out by other Commerce branches.

Director of OTS is John C. Green, who has been executive secretary of the Office of the Assistant Assistant and chief engineer of the National Inventors Council, both of both organizations now being performed by OTS.

The five divisions are: Information and Engineering, which will advise inventors on patenting, marketing and patenting of inventions; Industrial Research and Development, which will finance industrial research projects with \$1,000,000 granted by Congress; and which \$300,000 has been placed



WINDSHIELD BY PIPER

While many of the other light-plane companies are buying many of their components from sub-contractors, Piper makes most of its own components, even its emergency transparent plastic windshield. Above gold window outside windshield on new Cub trainer fuselage.

with the Bureau of Standards, Technical Advisory Service, which will answer industry's technical questions. Bibliographic and Reference, which will contain GPR's work of abstracting, describing technical documents. Technical Industrial Development, which will contain the investigation of new country and industry in new countries.

TEMCO Will Convert Doren C-54s for TWA

Officials of the Tross Engineering and Manufacturing Co., Dallas announce they have completed arrangements to convert 12 C-54s to TWA at a cost of approximately \$1,800,000.

Temco now has a backlog of firm orders for conversion of 54 military aircraft, approximately \$2,000,000, having converted and delivered about 30 ships to airlines for passenger operations. The company also manufactures B-24 and P-40 personal planes in addition to other and numerous other special projects, including large sub-assemblies for the Fairchild C-42 Packet.

Jet Engine Contract Transferred to Allison

Production of TG-180 jet engines for AAF at Buffalo has been transferred from the Chevrolet to the Allison division of General Motors Corp. Allison is assuming

the TG-180 program and after Jan. 1, 1947 will switch production to its own plant at Indianapolis where it already is making J-33 jets.

Transfer of the work from Buffalo to Indianapolis will be made gradually, with the job expected to be completed by March. This will raise the closing of Chevrolet's Buffalo aviation plant, which during the war was used to produce Pratt & Whitney engines. The plant will revert to the Defense Plant Corp.

Number of engines involved in the switch has not been disclosed. The TG-180 is the newest and most powerful of the jet engines developed by General Motors for the AAF and is AAF's request for new production by Allison.

Hindustan Air Factory Will Produce Trainers

Convention of the Hindustan Aircraft Factory at Bangalore, Mysore State, wartime manufacturing and repair base, into a production factory has been approved by the Indian Government's Standing Finance Committee. Based on recommendations made early this year by a technical committee representing the British Ministry of Aircraft Production, and

the Society of British Aircraft Constructors, the expansion and conversion will cost \$2,684,300.

The new enterprise, titled Central Aircraft Ltd., encompasses the wartime facility which was owned jointly by the Indian Government and Mysore State. Plans call for the design of a trainer-type plane for the Royal Indian Air Force, production of which is expected to give "know-how" and skill to Indian workers.

Bell Leaves Niagara Falls For New Research Center

The War Assets Administration has leased the Government-owned plant at the Niagara Falls Airport to Bell Aircraft Corp. for five years, plus the remainder of this year, beginning Sept. 3.

Bell will be based on an plant sales with a stated maximum for each year. At any period during the year, Bell may exercise an option to purchase the plant for \$4,285,000 less depreciation for and beginning every year of the contract term.

WAA and Bell will use the plant for research in development of military aircraft, rocket planes, guided missiles, gliders, aircraft and rocket motors, also in connection with the production of helicopters.



AND THEN—BANG!

This is what happens when a supercharger impeller, rotated up to 200,000 r.p.m., is carried beyond critical stress speed. This short job of Allentown Manufacturing Co. at Los Angeles typifies aircraft industry laboratory testing equipment used in the research of metal capable of withstanding the stresses of mounting speeds demanded of propeller and turbine rotors.

July 18 expected delivery on two more C-47s last week. Company officials do service inside service territory in the U. S., Alaska, Canada and Mexico, and are operating base at Victoria, B. C. Offices are in Seattle, Wash., of president, Edward K. Baker, executive vice-president, and Frank P. Royal, secretary.

POA Will Continue Flights for ATC

Pacific Overseas Airlines' subscription from United Air Lines providing for operation of Army Air Transport Command flights to Tokyo has been extended to the end of the year. POA officials have announced. The carrier is now making one trip weekly to the Japanese capital, about three trips weekly to Honolulu.

Transoceanic Air Lines, another UAL subscriber, is flying seven ATC flights weekly to Hawaii, and United has a daily ATC schedule to Tokyo. All trips are made with Army C-54s. Operations for ATC after Jan. 1 will be subject to new POA schedules.

POA probably will bid on a new ATC operation from Seattle to Tokyo via the Alaskan and another possible route covering Tokyo-Korea-Manila. The Alaskan run would involve several trips a week.

In six first five months of operation in Aug. 31, POA flew over 4,000,000 plane miles to Pacific, including 3,440,000 miles on the ATC run to Tokyo and 3,000,000 miles on its own more recently initiated commercial trips. The latter included one round-trip to Shanghai for UNRRA, two round-trips to Manila for Consolidated Steel, a round-trip to Anchorage, Alaska, and several shuttles to Honolulu.

Company's petition asking CAA to consider the Los Angeles-Manila route also (Aviation News, Sept. 3) through cooperation of the board has been turned down by the Board.

Seek Arkansas Permit

North Central Air Transport, Inc., Fayetteville, Ark., has asked the Arkansas Public Service Commission for permission to operate a bi-state intrastate service between Texarkana and El Dorado until its entire route can be opened. SCAT reported that the temporary bi-state operation between the two cities had been furnished at a loss of \$1,273 for 32 days, during which only 15 passengers were carried.

New Midwest Lines Push Extension Plan

The new midwestern centers—Kansas Airways, Inc., Wichita, Kan., and Prairie Airway, Inc., Abilene, Wis., recently began intrastate operations and are pushing plans for further expansion of their systems.

Kansas Airways, operating two-engine Beechcrafts, is now flying from St. Francis in the northern corner of the state to Fairfax Municipal airport, Kansas, City, via Colby, Norton, Philadelphia, Manhattan, Marysville, Clay Center, Lawrence, Topeka, and Lawrence. Another route extends from Wichita to Newton, Bellevue and Manhattan, the latter being the connection point for the run to Kansas City.

President of the company, which intends to add legs to all portions of the state, is A. V. Reed. Wichita's P. T. Haley, also of Wichita, is vice-president.

An independent firm scheduled late this fall, Pacific Airways is operating four-engine C-54s between Omaha and Alliance via



MARKETER:

Development of advanced marketing methods to provide the spectacular growth of airfreighted perishables is the objective of M. K. Creel (M.K.), president of Airborne Commodities Sales Co., who is shown presenting Olin's Governor Frank J. Lausche with a crate of California cantaloupes picked 24 hours before. Acting as a freight forwarder, A/CSCO recently negotiated new contracts with Pacific coast growers and shippers to send over the two-week run of fruit, flowers and other perishables that fall in California, Connecticut, Indianapolis and Dayton (company headquarters).

Florida Rate War

Two adjoining Florida counties have virtually entered into a rate war in their efforts to persuade large food store operators to use their respective airports. The fight is being waged upon a struggle for Florida's most costly transportation. While Air Service reportedly has agreed to move from the Pinellas County International airport to Tampa's Dade field across the bay is adjacent Hillsborough county. Keweenaw trail (Hillsborough county) have also made overtures to Harry Pierpont's U. S. Air Force Pinellas county, planning similar strategy, was said to be discussing heavily landing fees and gasoline taxes.

Lanette, Hastings, North Platte, Scottsbluff and Chadron with two round-trip daily. Principal backer of the company, which is considered one of DC-4's best jobs, Hyman Mandel and banker.

K. C. Forwarding Agency Will Handle Air Freight

An Air Cargo Forwarding Agency, a \$100,000 corporation, has been formed at Kansas City to coordinate freight shipments with air cargo carrier operating through and about that city.

Jack Nelson of Glatts, Kan., manager of the Agency, says if the clearing house idea, now a test setup, is successful, offices will be opened in other cities. The firm will solicit business for the carriers, handle ground transportation of freight, and furnish route and rate information to shippers.

Four air cargo express operators now or less regularly through Kansas City National Air Cargo Corp., Air Cargo Transport Co., Freight Air Express and Viking Air Transport, all make weekly trips. One day firm, a branch of the Kansas City Southern Railway, operates an air cargo system originating there.

Emergency Averted

Kansas City Southern Railway, subsidiary of Kansas City Southern Railway Co., recently helped avert a shutdown at the Kansas City Chevrolet assembly plant when it took 300 advance loads from plant, Mich. Total weight of the cargo loaded in one of the carriers two C-47s, was 7,500 lbs.

TRANSPORT

CAB Shelves Deicing Proposal In Face of Industry Opposition

Postponement of thermal deicing requirements seen by engineers as permitting more orderly development of solution to anti-icing problem, important to all-weather flying.

CAB has postponed indefinitely adoption of a proposed requirement that after Oct. 1, 1949, no commercial aircraft be flown into icing conditions unless equipped with approved thermal deicing systems.

The anti-icing problem, one of the main factors in all-weather flying, is of paramount importance and is the subject of constant research. But engineers opposed the proposed thermal deicing requirement would force premature installation of deicing that have not yet been fully proven.

The Board was advised by Civil Aeronautics Administration, industry, and AAF engineers that thermal deicing still is in experimental stage, and that forced installation might give unsatisfactory results.

The amendment on which adoption now has been deferred was outlined on CAB Draft release No. 66, and proposed that after the end of next year commercial planes could not be flown into icing conditions unless "equipped with an approved thermal or equivalent means of deicing wings, tail and propeller surfaces and other parts . . . as specified by the (Civil Aeronautics) Administrator."

The Board expressed concern "with the fact that existing and deicing methods commonly and correctly used provide only limited protection from the hazards of excessive accumulation of ice on aircraft in flight." A Board survey indicated, was released stated, that research and engineering had accomplished "considerable development" of the thermal method. But it added that "they still require deicing equipment" will be acceptable which will successfully prevent serious accumulation of ice during flight in any weather condition and which is approved by the Administrator.

The proposed amendment was considered for comment by the

industry, by CAA engineers, Air Transport Association, and other interested parties. ATA has not made public its reply, but is reported having other adverse opinion.

CAB and industry engineers said the Board that conversion of existing equipment to thermal deicing would require practical re-building of wings and suspension to admit air ducts, and major changes in the fuselage. This would mean extensive grounding of the airlines, to say nothing of the expense, which might exceed original cost.

Some authorities contended that conversion of DC-3s and DC-4s would not be feasible, regardless of how in time and investment, because installation of such equipment would require elaborate structural members on wings and other elements in the wings and tail. In that case, only about one third of the total airline fleet would be heated during the end of 1949.

CAA engineers said not enough is known about the amount of heat needed, or about its proper application, for all weather conditions to justify freezing deicing sufficiently to equip all planes in 15 months, even if the job were physically possible. Furthermore, they said, underdeveloped methods such as fire, application of exhaust heat on structures, removal of structures, and other methods are in the plane, would be involved.

Available information is that the new Douglas DC-4, Martin 302 and 303, Republic Rainbow, Canadian 246, and Boeing 377, and 417, will have best deicing. These manufacturers are all contributing to solution of the problem. They are taking a chance an certification, which, if denied, will mean the thermal systems will have to be discontinued.

The general type of thermal systems are considered practical. One that use exhaust gas to heat

pure air through an exchanger, which would feed the duct system. The other is gasoline heaters, usually located in the plane. The latter is regarded as superior to the former, but some manufacturers have determined upon the former. Due to danger of icing, and of ice on vapor in the system from evaporative engines, direct circulation of exhaust has never been seriously considered.

Any loose couplings allowing escape of exhaust gas or raw vapor would threaten fire, corrosion, and carbon deposits, and temperature of structures must be closely watched.

Deicing of wings and empennage leaves much to be done. Preheating elements of rods and cables such as antennas and leads, can be used out of commission. Window deicing is not easy; pilots have carried out in some test flights to keep the glass clear, but too often have had engine heating behind them. Freezing of controls has been rarely experienced. Failure of landing gear due to ice has not been reported. Much progress has been made in that



PLAN AIR POSTOFFICE

Temporary conversion of a TWA DC-4 to a New York postoffice is being planned by those TWA engineers and postal officials. The plane was fitted with mail handling facilities for demonstration flight to New York to call attention to the new 30-cent airmail postage rate. After a trip from Washington to Chicago via Dayton and Chicago-New York via Pittsburgh, it will return to cargo service. Picture shown left is left (seated) Ray Dunn, TWA superintendent of engineering and maintenance at New City. W. H. Nichols, New York eastern area airmail superintendent, J. A. Givens, TWA engineering supervisor, and (standing) Joseph O. Reskovic, commercial postmaster at Washington, D.C., and William W. Freeman, Washington postoffice inspector.

erating of propellers and in heat delcating of carburetors.

Most engineers agree that fuel is most precious of all anti-ice devices. Annual fuel cost required to prevent ice on wings and engines is comparatively small. Cost of fuel for gasoline de-icers is not prohibitive.

Increasing efficiency of fuselage flow for speed and efficiency automatically spurs effect and resulting designs of even small accumulations of ice.

In its proposed statement, CAB used the terms "light icing conditions" without defining it. Engineers commented that light icing can turn into heavy icing quickly and without any possible warning from weather Bureau or reporting pilots. Heavy icing was cited as the cause of an airplane so fast that it cannot climb through 1,000 ft. of it, or descend safely through 1,000 ft. of it to the ground.

Presumably, CAB will give air transport the advantage of flying at or above 25,000 ft., the approximate ceiling on icing conditions, but they will allow have the problem of passing through the lower air levels.

Airport Users Survey

Regular operations of the nation's scheduled airlines account for less than 25 percent of the total use of all airports, according

to the Air Transport Association Statistics for the first four months of 1946, taken from the Aircraft Operations Reports of CAA, reveal that 87 percent of total airport use is attributable to unscheduled noncommercial and private operations and 16 percent to Army and Navy, AFA said.

CAB Ponders New

Nonsched Regulation

Possibility that CAB may circulate a new proposal to amend section 366.1 of the Board's constitution. Regulations, exemption order affecting unscheduled air services, was sent last week as the Board considered what procedure it will follow in bringing the unscheduled case to resolution.

An airroad industry has commented, for the most part unfavorably, on a proposed amendment to the section circulated last summer (Aeronautics News 107). Particular target of the comment has been the Board's proposed presumption that a carrier is not unscheduled if it operates more than 10 round trips a month between the same two points for two consecutive months.

This criterion probably will be eliminated or at least tempered. The Board also can be expected to differentiate between unscheduled cargo and unscheduled passenger operations, but it is doubtful that it will devote from its attention to terminate the competition as it applies to scheduled airlines in foreign and overseas transportation.

The Board has given assurance that such regulation will be held on the issue of regulation of unscheduled operations before new rules are put in effect. Original expectations was that this would be held soon after Oct. 1 but it is now in circulation the industry with a new proposal would make substantial postponement of this step in the procedure.

More Mail Profit

Increase in airmail volume following inauguration of the new 3-cent postage rate Oct. 1 may be expected to bring more profit per pound than accrues through 3-cent surface mail, Robert Rumpel, Executive Vice-President of the Air Transport Association, recently told the National Association of Letter Carriers at Detroit.

NWA Mechanics Pact Is Approved by Union

Agreement between Northwest Airlines and the International Association of Mechanics on settlement of a five-month-old labor dispute has been followed by a new contract, approved by the union membership by a vote of 323 to 50.

The contract will provide pay increases averaging 14½ cents an hr. Other provisions rule for time and a half pay and a \$10,000 life insurance policy for each flight, night shifts premiums, and new security rules.

The emergency board named by President Truman had recommended denial of the mechanics' demand for an 18-cent increase, though a majority number proposed a 7-cent rate. The new contract, affecting 683 employees, will go into effect immediately and run until July 1, 1947.

The mechanics struck last July 2, grounding NWA planes for 30 hours.

Boarder May Take Over Airline After C-46 Crash

There is a possibility that the Hawaiian government may take over American Airlines de Honolulu, S. A. (AAS) as an effort to deal with the crash of a C-46 in which 39 people lost their lives.

AAS, organized in March as a subsidiary of Lath American Airways, Inc., started operations with three surplus C-46s, only one of which is now flying. Aviation circles in Honolulu feel that these ships are gravely unsuitable for the small islands used in the industry.

Warren Baker Appointed Trial Examiner for CAB

Warren E. Baker, formerly with the general counsel's office of the War Shipping Administration, recently was appointed a CAB trial examiner. Baker covered his law degree from Boston University in 1940 and practiced law at Fort Wayne, Ind., from 1940-42.

On active duty as a naval officer from July, 1943, to December, 1945, he was assigned to WSA in May, 1945, after extensive service at sea. Upon his discharge from the Navy, Baker remained on the WSA general counsel's staff in a civilian capacity until leaving for CAB.

Alaskans Score CAB On Pacific Decision

Alaska Airlines has welcomed CAB's recent Pacific route decision giving Northwest Airlines routes from Chicago and Seattle to Anchorage as constituting a serious impediment to development of the territory and has requested the Board to reconsider its opinion.

As matters now stand, its petition contends, "Alaska remains a white spot, with Northwest's Oriental route serving only one Alaskan city and the rest of the territory forced to rely on feeder service and an overland airline for transportation to the outside."

Alaska Airlines said it now serves 143 cities and towns within the territory and is the only airline set up to provide complete over-continents freight and passenger connections between all major Alaskan points and the U. S. Accordingly, the law outside, CAB's denial of its request for a U. S. outlet automatically eliminates over-continents for most of Alaska's key population centers.

IATA Meeting

The Western Traffic Conference of the International Air Transport Association, one of nine such regional groups, met last week for its first session at New York. Airlines representatives present were seeking uniform standards on tariffs, schedules, conditions of carriage, reservations codes, etc.



MAP FACSIMILE:

In the first over-continental operation, United Air Lines has started use of Japanese reproduction of movement of weather maps between stations. Initial equipment, maps above, has been installed at Denver and Chicago.



TWA Change

TWA has rearranged portions of its cargo imports on short-haul to accommodate shipments varied in size. But at left have been removed and are built in across the route.

Scars Boosts Plans For Flight Delivery

Plans by Sears, Roebuck & Co. for fashion merchandise distribution in Hawaii simultaneously with its display on the mainland through the use of air freight service have been delayed by company officials.

An interview with Henry Ross, Sears vice president who went to Honolulu to study merchandising problems there, credited him as saying the firm's next step is an agreement would be the sending of fixtures to the islands—a move not far distant.

Board's announcement is evidence of Sears' satisfaction with the two methods of merchandise air delivery in which it presently is engaged. One of these is the flying of orders from its Kansas City warehouse to Colorado points via Continental Air Lines (July 22, Aeronautics News) to meet competition with Montgomery Ward, which has a warehouse in Denver.

The other is a contract operation whereby regular flights deliver Alaska merchandise from New York to Kansas City, Dallas, Chicago and Los Angeles. Cargo lines handling this business are National Skyway Freight Corp., Wilco Airways, and Black Airways.

On the Colorado operation, expense so far is heavy, but Sears anticipates that air freight costs will come down and volume go up to justify commission. Popularity of

the service is increasing. Sears finds the contract operation profitable. Savings in processing and handling more than offset the higher freight rates. Sears are three on transport. One route due to the freight parties size 17 or 18 cents a dress is saved by not having to unpack or repack.

The company has its own plane to ferry executives around the country, but plans no expansion in its own air service. Who will fly to Honolulu has not been announced, but there was a report last week the contract would go to United Air Lines, recently cited as CAB selected by a route from Los Angeles to Honolulu. The Flyers Three (Nelson Skyring) meanwhile, have disclosed a contract with Sears to transport three thousands of dresses a week between New York and Los Angeles.

Examiner Recommends Better Trunkline Service

Justly improved trunkline service between Cincinnati and New York moved closer to fulfillment recently when CAB Examiner F. A. Law, Jr., recommended that the Ohio city be included as intermediate point on TWA's AM 2 and receive new nonstop service on American Airlines' AM 28.

Law asked the Board to deny American's application for an extension of AM 28 from Cincinnati to New York Newark via Pittsburgh, Wheeling, Del., and Philadelphia, recommending instead that AM 28 be extended parallel with AM 23 from Washington to New York Newark via Baltimore and Philadelphia; that Washington be added as an intermediate point between Baltimore and Philadelphia; that American be authorized to operate nonstop over AM 28, an extension, between Cincinnati and either Philadelphia or New York/Newark, or both.

Route extension applications of PCA, Calumet, Chicago and Southern, United and itself in the Cincinnati-New York area should be denied, Law stated.

Four Engine Pilot Raze Effective on TWA, AOA

Pilot pay increases on four-engine aircraft recommended by a Presidential emergency board have been put in effect by American and American Overseas Airlines. TWA applied the increases to its pilots Aug. 6



STRATOCRUISERS FOR BOAC.

Present when British Overseas Airways Corp. signed recently for purchase of six Boeing Stratocruisers (AVIATION NEWS, Sept. 9) at the Boeing Aircraft Co. plant in Seattle were (from left to right) Fred H. Gillett, Boeing sales manager; Wilbur E. Isard, the manufacturer's vice president of engineering and sales; Vernon G. Orsaker, BOAC's regional director, West Atlantic; and Air Vice-Marshal Sir Victor Tait, the carrier's technical director.

(AVIATION NEWS, Aug. 22) Airways' delay was explained as due to failure of the Air Line Pilot's Association to meet its requirements for pay and working conditions. The union was threatened by the emergency Board.

Pay increases, which range to 36 percent for employees in international service and give first pilots in such service a base pay increase of \$150 a year, will be retroactive with American overruns to Oct. 31, 1949, and with Americans to January, when they began four engine overhauls.

Sea-Air Operations Are Urged by Report

Joint sea-air operations to avoid disruption of mails "in times of emergency between competing American mediums" is called for in a recently-published report by the Panair Planning Committee of the Maritime Commission. The report has been forwarded to Congress. Provision was made that the government may find it necessary to subsidize overseas airlines as well as overseas shipping operations.

In reasserting the Commission's position that shipping companies should be permitted to operate afloat, the Committee pointed out that the ship-air industry has not been confined to the shipping and aviation industries, but also has resulted in a close-out difference of opinion between the Maritime Commission and CAB. "The Maritime Commission," the report declared, is charged by

Congress with the responsibility of developing a merchant marine adequate to the country's needs. The policy of barring ship lines from aviation directly could impair our efforts in this direction. In that case we would find ourselves in a position where our agency was trying to build up the merchant marine while another, through restrictive policies, tended to retard it."

With air cargo still measured "in pounds," the Committee reported, shipping operators have no reason that air transport will take over as any available degree away or bulk cargo shipments—the backbone of cargo trade. "The chances are that the airlines will actually decrease overseas available to ships" by serving as ferries to areas not accessible to seaborne ships.

In discussing passenger traffic, the Committee foresees airline expansion of a good part of the steamship line's passenger trade in view of the widespread "great boom in travel" between the nations the surface operators will have a passenger traffic volume in the postwar years at least equal to that of the prewar years.

"All in all," the report says, "it is quite likely that, although the airlines will take half of the total (revenue passenger) traffic, that which remains for shipping may well equal or even exceed the prewar total."

Estimates were made that several airplanes a day will operate over the North Atlantic for the next few years, with the schedule stepped up substantially as a plane each hour each way.

Recommend Mid-Continent Extensions to Memphis

Executives of Mid-Continent Airlines' Aug. 26 to provide new links from Kansas City, Mo., and Joplin, Mo., to Memphis via Springfield, Mo., were recommended last week by CAB Chairman Curtis C. Henderson in the Kansas City-Memphis-Florida case.

The chairman asked the Board to deny the applications of Braniff Airways for an extension from Kansas City to Atlanta, Chicago, and Southern Air Lines for a route between Omaha and Miami, of Delta Air Lines for extensions from Birmingham, Ala., to Kansas City and Springfield; and of Eastern Air Lines for a Memphis to Kansas City link. Henderson said the record of the case did not establish the need for through-flight, single-company service connecting the middle west and northwest with Florida.

Airport Guide

Publication of an Airport Guide, on an ad to the private flyer, has been announced by Decker Air Services Inc., Fort Lauderdale, Fla. The guide is an five pocket-sized regional volumes for airports of the Pacific, North Central, South Central, North Atlantic and South Atlantic regions. It is compiled by some alphabetically, and in groups by cities.

Percy Gets Medal

Award of the Legion of Merit to Walker Percy, commander of the Civil Aeronautics Administration's aviation activities relating to the Provisional Civil Aeronautics Organization.



Walker Percy, ICAO's Caribbean regional air navigation meeting of which he is Secretary General. The award was in recognition of Percy's services as War Department liaison officer with PICAO. As a Major in the AAF, he was technical secretary of the U. S. delegation to PICAO's North Atlantic regional meeting at Dublin and adviser to U. S. representatives at the organization's Interim Council and Air Navigation Committee in Montreal. He left the AAF and joined CAA in May.

PanAm Renews Blasts For Domestic Routes

Abs for mailboxes connecting 13 U. S. terminals and passenger service for domestic routes.

Pan American Airways, which last week resumed service to Mexico to an important link in its world-wide system, has sent down the gauntlet to the nation's domestic carriers in its bid for trunkline connecting 13 U. S. terminals on PAA overseas routes.

Reopening routes March, 1948, when the application was filed, PAA's domestic route had seen comparatively little activity after the postwar conference last October. Pan American attorneys had requested postponement of further procedural steps until after the Board handed down its decision in the Latin American case. Hearings are set for Oct. 10.

Opening Case—Opening gun in the campaign for domestic routes—connecting with the filing of exhibit—was an additional public relations campaign which included purchase of large blocks of space in principal newspapers. PAA offered the U. S. air traveler the first service by the fastest planes ever used in commercial flight—the 480 mph. Republic Rainbow and the 340 mph. Boeing Superstratocruiser.

In addition to promising an advance of any competing speeds of more than 300 mph faster than any transport now operating, PAA declared that the rates placed in effect on "this passenger-type type of travel will be lower than present coast-to-coast and other domestic fares."

Meanwhile, a solid front of opposition was being formed among the dependably enthusiastic airlines. American, Braniff, Delta, Chicago and Southern, Eastern, National, Northwest, PAA, TWA, United, Western and Continental have been granted the right to intervene in the case.

PAA Case—PAA will press home the fact that since the beginning of the war its domestic service has been greater than any other foreign nation, most of them in direct competition to the Pan American system. If such competition is necessary in overseas operations it is also in the public interest for domestic service, PAA will emphasize.

The 13 cities which PAA seeks to link in its routing scheme are New York, Boston, Philadelphia,

Baltimore—Washington, Chicago, Detroit, Miami, New Orleans, Houston, Seattle, San Francisco and Los Angeles. Sample flight times proposed include Los Angeles to New York 8 hr. 15 min. compared to the fastest time now in effect of 10 hr. 15 min., San Francisco to New York 5 hr. 35 min., Detroit to New York 2 hr. 35 min., instead of the present schedule of 2 hr. 30 min., New York to Miami 2 hr. 30 min. against 3 hr. 35 min. and New Orleans to Chicago 2 hr. against 3 hr. 3 min.

In announcing resumption of service to Manila, PAA instituted a one-weekly schedule with DC-4s at least before the present thrice weekly. The route will later be pushed through to Hong Kong.

Waterman Takes CAB Case to Court

CAB's persistent refusal to grant certificates permitting Waterman to acquire in its transportation either because of restrictions in Section 408 (b) of the Civil Aeronautics Act or as the broader ground of competitive public interest has been taken to court by Waterman Steamship Corp.

Waterman has petitioned the United States Fifth Circuit Court of Appeals to review and set aside CAB's decision in the Latin American case, which denied Waterman's application and granted the bid of Chicago and Southern Air Lines for a New Orleans-San Juan, P.R., route.

In its petition, Waterman asserted that Chicago and Southern had failed to show fitness and ability to fly the route and that the Board had erred in not requiring Chicago and Southern to show how much mail pay it would need for the operation.

CAB's finding that a surface carrier existing on application under Section 401 of the Civil Aeronautics Act must also meet the tests of Section 408 (b) of the Act

is erroneous as a matter of law, Waterman declared. The petition added that as any case the Board had not given Waterman the opportunity to show that its use of aircraft would be in the public interest as specified in Section 408 (b).

Canadian Air Operations Reach New Peak in June

Operating revenues of four Canadian scheduled and 18 non-scheduled air carriers for June were the highest yet recorded for commercial air operations in Canada.

Canadian Air Transport Board preliminary figures show a total of \$1,986,908. Operating expenses amounted to \$1,738,800 in May to \$1,873,600, leaving net operating revenue at \$133,900. Increases in revenue better flows also was highlighted by Air Square Inc. tabulated, the report showing \$1,984 for June compared to \$1,808 for May. Revenue miles totaled 2,336,000, and more than 50,000 passengers were carried.

CAB ACTION

- The CAB, according to the following:
- 1. Permitted Trans-Canada Air Lines to carry mail from Toronto to Vancouver.
- 2. Granted an extension of the deadline for filing of evidence in the case of the proposed Chicago and Southern Air Lines route to Manila.
- 3. Granted the Air Transport Board's application for a certificate of public convenience and necessity for a New York-San Juan, P.R., route.
- 4. Granted the Air Transport Board's application for a certificate of public convenience and necessity for a New York-San Juan, P.R., route.
- 5. Granted the Air Transport Board's application for a certificate of public convenience and necessity for a New York-San Juan, P.R., route.
- 6. Granted the Air Transport Board's application for a certificate of public convenience and necessity for a New York-San Juan, P.R., route.
- 7. Granted the Air Transport Board's application for a certificate of public convenience and necessity for a New York-San Juan, P.R., route.
- 8. Granted the Air Transport Board's application for a certificate of public convenience and necessity for a New York-San Juan, P.R., route.
- 9. Granted the Air Transport Board's application for a certificate of public convenience and necessity for a New York-San Juan, P.R., route.
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CAB SCHEDULE

- See 1. Airline schedule for the CAB's Airline Schedule (SAS).
- See 2. Airline schedule for the CAB's Airline Schedule (SAS).
- See 3. Airline schedule for the CAB's Airline Schedule (SAS).
- See 4. Airline schedule for the CAB's Airline Schedule (SAS).
- See 5. Airline schedule for the CAB's Airline Schedule (SAS).
- See 6. Airline schedule for the CAB's Airline Schedule (SAS).
- See 7. Airline schedule for the CAB's Airline Schedule (SAS).
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- See 13. Airline schedule for the CAB's Airline Schedule (SAS).
- See 14. Airline schedule for the CAB's Airline Schedule (SAS).
- See 15. Airline schedule for the CAB's Airline Schedule (SAS).
- See 16. Airline schedule for the CAB's Airline Schedule (SAS).
- See 17. Airline schedule for the CAB's Airline Schedule (SAS).
- See 18. Airline schedule for the CAB's Airline Schedule (SAS).
- See 19. Airline schedule for the CAB's Airline Schedule (SAS).
- See 20. Airline schedule for the CAB's Airline Schedule (SAS).



FOR EXPANSION IN INDIA:

The British-built Vickers Viking is the first of a fleet of six to be turned over to Indian National Airways by Vickers Armstrong Ltd. for use in further expansion of India's airways. (British Columbia photo)

Non-Scheduled Freighters Create Business

THE scores of independent non-scheduled air freight carriers are performing a phenomenal job building business for aviation which never existed before.

It is true that possibly as many as a third to one half of them cannot remain in business for economic reasons, that price cutting among the newcomers is ferocious, and that some are operating below the standards of the scheduled airlines, although their safety record has been far better than responsible industry observers were forecasting six or eight months ago.

But these pioneers have been given too little credit by the rest of the aviation industry for their achievements in converting so many firms in business and industry to air cargo. Business prejudice against air cargo have been as strong as the personal fears which retarded mass passenger travel for so long. The frequently intangible advantages of high speed transportation for cargo required painstaking salesmanship and constant battling at the counter arguments and inertia of those who heeded sales, marketing and merchandising, rather than contact with the top executives alone.

AVIATION NEWS, August 13 revealed that the non-scheduled and contract carriers, by official reports filed with CAB, carried from five to ten times the volume of freight flown by all of the scheduled

lines in May and June, although the national air freight load was insignificant prior to VJ Day, before establishment of most non-scheduled air cargo services.

Figures just released emphasize again the non-scheduled gains. The extent to which Rick Airways, largest of the new domestic carriers, has built its traffic in revenue ton miles is indicated by the latest reports filed with CAB by the three scheduled airlines which lead in air cargo, and by an announcement of Rick.

| | American | United | TWA | Rick |
|------|----------|---------|---------|---------|
| June | 249,802 | 217,535 | 198,236 | 690,730 |
| July | 449,902 | 392,943 | 238,306 | 836,134 |

In August, Rick more than doubled its June business, with 1,674,691 revenue ton miles, bringing that company's first six months traffic to 5,692,943 for its 10 aircraft. August figures for the other carriers have not yet been sent to Washington.

Despite the ecstatic enthusiasm which has been leveled at these enterprising flying van lines, they have promoted aviation aggressively and their sales efforts are making an enormous and permanent impression on air transportation, not to speak of the impetus being given to the nation's marketing and merchandising systems.

VA Students Increase 1,000%

OPTIMISTIC news of aviation schools over the number of veterans who would seek aviation education under the terms of the Servicemen's Readjustment Act seem to be well on their way to fulfillment on the basis of figures compiled by the Veterans Administration.

While the most recent available data are now old (freepress on the basis of an April 30 sampling of 20 percent of contract schools), operators are drawing their chief satisfaction from the amount of increase shown over a previous Veterans' Administration tabulation, an overall increase of better than 1,000 percent.

VA makes its sampling every two months and figures for June 30 are not yet complete. As of April 30, there was a total of 10,389 students enrolled in all categories of aviation instruction, compared to 895 at the end of February. The greatest number on April 30, as was the case ear-

lier, was taking mechanics courses, or 5,865 as against 773 in February. Aeronautical engineering, a category not listed in February, was second in April, attracting 3,289 students.

Private flying was number three in the courses, with 798 enrollments. The number in February was 56. Commercial flying courses had 471 in April, 68 in February, aviation maintenance, 326 in April, 56 in February. Another new category in April showed surprising interest as 307 students were enrolled for airport management courses. Unclassified aviation instruction was listed for 497 students.

Full realization of the impact of the veterans programs on aviation is still impossible, since acceptance had not even reached its peak by June. A conservative estimate would place the number of students at 33,500 at mid-year, with the high mark still months distant.

ROBERT H. WOOD



Famous airlines select the Sperry A-12 Gyropilot

A-12 GYROPLOT BRINGS GREATER FLIGHT SAFETY AND PASSENGER COMFORT

Many leading airlines, in their continuing efforts to improve navigation under all weather conditions, are advancing schedule reliability when management without personnel. They have selected the Sperry A-12 Gyropilot to supplement their flight personnel's skill and experience.

The A-12 Gyropilot gives the Captain complete automatically stabilized control of his aircraft at all times, including changes in altitude, bank and rate. Over control, "looming," and "following" are eliminated.

As a standard accessory to the A-12 Gyropilot, Sperry offers an Automatic Approach Control—another step toward complete automatic flying that will result in improved schedule reliability.

We will gladly supply complete information about this versatile automatic pilot.

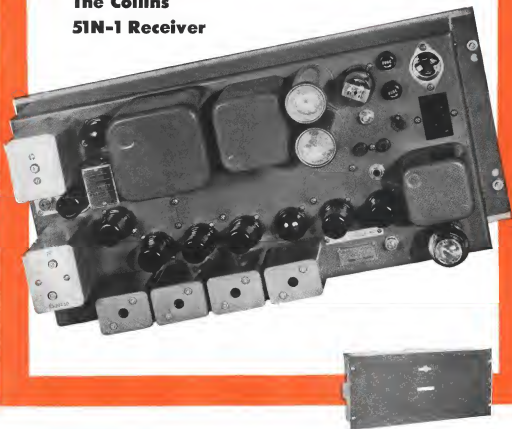
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The Collins 51N-1 Receiver



For Continuous Airline Service

The 51N-1 is a new single channel receiver designed specifically for airline ground station reception between 2.5—12.0 mc. Thoroughly engineered, it offers superior performance in essential features—signal to noise ratio, sensitivity, selectivity, image rejection, and reliability.

Crystal control provides a very high order of stability. The output transformer is arranged for either straight output or simplex control from a remote position. The receiver contains an automatic noise limiter. B.f.o. is available on special order.

For further information, send today for descriptive literature.

SPECIFICATIONS:

Application: single frequency reception
Frequency range: 2.5—12.0 mc.
Frequency control: quartz crystal
Signal to noise ratio: 10 db at 2 micro volts input across 100 ohms
Sensitivity: variable manually
Image rejection: 85 db minimum
Selectivity: 5 kc total bandwidth at 6 db down from resonant frequency; 16 kc at 60 db down
Weight: 29 pounds
Dimensions: standard 19" rack mounting panel, 8 $\frac{1}{4}$ " h, 11" d

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